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=> s enzym# and microorganism#
L1        14815 ENZYM# AND MICROORGANISM#

=> s l1 and 435/183/ccls
L2          265 L1 AND 435/183/CCLS

=> s l2 and prote?

L3          247 L2 AND PROTE?

=> d 240-247 ti ab
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US PAT NO: 4,304,864 [IMAGE AVAILABLE] L3: 240 of 247
TITLE: Long-chain acyl-coenzyme-A synthetase

ABSTRACT:
There are disclosed an **enzyme**, long-chain acyl-coenzyme-A synthetase which is specific for fatty acids having 14 to 18 carbon atoms and a process for the purification of the **enzyme** which involves solubilizing the **enzyme** with a surfactant and subjecting the solubilized **enzyme** to affinity chromatography..

US PAT NO: 4,269,942 [IMAGE AVAILABLE] L3: 241 of 247
TITLE: Process for preparing acyl-CoA synthetase LCF-18

ABSTRACT:
Acyl-CoA synthetase, having a high activity to C.sub.16 -C.sub.18 long chain fatty acids, is obtained by cultivating Pseudomonas aeruginosa IFO 3919. Pseudomonas aeruginosa IFO 3919 can produce acyl-CoA synthetase LCF-18 in large quantities, and the acyl-CoA synthetase LCF-18 produced by Pseudomonas aeruginosa IFO 3919 is very stable in storage.

US PAT NO: 4,237,224 [IMAGE AVAILABLE] L3: 242 of 247
TITLE: Process for producing biologically functional molecular chimeras

ABSTRACT:
Method and compositions are provided for replication and expression of exogenous genes in **microorganisms**. Plasmids or virus DNA are cleaved to provide linear DNA having ligatable termini to which is inserted a gene having complementary termini, to provide a biologically functional replicon with a desired phenotypical property. The replicon is inserted into a **microorganism** cell by transformation. Isolation of the transformants provides cells for replication and expression of the DNA molecules present in the modified plasmid. The method provides a convenient and efficient way to introduce genetic capability into **microorganisms** for the production of nucleic acids and **proteins**, such as medically or commercially useful enzymes, which may have direct usefulness, or may find expression in the production of drugs, such as hormones, antibiotics, or the like, fixation of nitrogen, fermentation, utilization of specific feedstocks, or the like.

US PAT NO: 4,229,538 [IMAGE AVAILABLE] L3: 243 of 247
TITLE: Process for preparing acyl-CoA synthetase LCF-18

ABSTRACT:
Acyl-CoA synthetase, having a high activity to C.sub.16 -C.sub.18 long chain fatty acids, is obtained by culturing strains belonging to various genera. As is known, acyl-CoA synthetase, having a strong activity to C.sub.16 -C.sub.18 long chain fatty acids, is generally obtained from liver of rat; however, it has now been discovered that acyl-CoA synthetase can be obtained from **microorganisms** and this **enzyme** is called acyl-CoA synthetase LCF-18. By use of acyl-CoA synthetase LCF-18 of the present invention which has a high activity to C.sub.16 -C.sub.18 long chain fatty acids, serum non-esterified fatty acid of human beings can be accurately determined, and it is very useful for diagnosis of diabetes and so forth.

US PAT NO: 4,090,919 [IMAGE AVAILABLE] L3: 244 of 247
TITLE: Water-insoluble tannin preparation for immobilization of **proteins**

ABSTRACT:
A water-insoluble tannin preparation is obtained by covalent binding or physical adsorption of tannin onto a water-insoluble, hydrophilic carrier. The preparation has a specific affinity for **proteins** and can be used as an adsorbent for purification, isolation and/or separation of **proteins** (e.g., Enzymes, albumin, globulin, hormonal **proteins**) from a mixture of compounds. Further, the water-insoluble tannin preparation having a catalytically active **enzyme** absorbed thereon can be used as a heterogeneous catalyst to induce enzymatic reactions.

US PAT NO: 4,055,469 [IMAGE AVAILABLE] L3: 245 of 247
TITLE: Purification of microbial **enzyme** extracts using synthetic polyelectrolytes

ABSTRACT:
Nucleic acids and unwanted **proteins** are removed from microbial **enzyme** extracts by precipitation with water-soluble, cationic polymers comprised of monomers having the structure ##STR1## wherein R.sub.1 is a hydrogen atom, a lower alkyl group, or the equivalent and R.sub.2 is a nitrogen containing group capable of carrying a positive electrical charge when the polymer is dissolved in an aqueous solution.

US PAT NO: 4,011,169 [IMAGE AVAILABLE] L3: 246 of 247
TITLE: Stabilization and enhancement of enzymatic activity

ABSTRACT:
Enzyme-containing compositions having improved stability and enzymatic activity in aqueous medium, comprising an **enzyme** and certain aminated polysaccharides, such as aminated cellulose and aminated starch. Enzymatic detergent compositions comprising certain organic surface-active agents in combination with enzymes and aminated polysaccharides are disclosed as well.

US PAT NO: 3,868,448 [IMAGE AVAILABLE] L3: 247 of 247
TITLE: Method for bloat control

ABSTRACT:
Administration of an **enzyme** obtained from the fermentation of a specific Streptomyces griseus is effective in preventing and/or curing bloat in ruminants.

=> d 230-239 ti ab

US PAT NO: 4,663,290 [IMAGE AVAILABLE] L3: 230 of 247
TITLE: Production of reverse transcriptase

ABSTRACT:
Methods are described for the production of the .beta.-subunit of reverse transcriptase using recombinant DNA techniques. Methods and compositions are described for cloning and expressing the gene coding for the .beta.-subunit of reverse transcriptase and characterizing and isolating the gene product. The recombinant plasmids constructed herein contain the necessary signals and controls for efficient expression of the reverse transcriptase gene in bacteria and other **microorganisms**. The isolated reverse transcriptase gene product is a functional, metabolically stable and biologically active **protein**.

US PAT NO: 4,659,667 [IMAGE AVAILABLE] L3: 231 of 247
TITLE: Process to recover crystalline enzymes and crystalline enzymes produced thereby

ABSTRACT:
This invention relates to a novel process for the recovery of **enzyme** crystals. The enzymes may be obtained from any **enzyme**-producing **microorganisms** such as bacteria, fungi, and yeasts. The invention contemplates supersaturation and/or crystallization to obtain enzymes in the crystalline form, and is particularly effective for the recovery of heat stable alpha-amylase in a crystal form.

US PAT NO: 4,659,567 [IMAGE AVAILABLE] L3: 232 of 247
TITLE: Molecules with antibody combining sites that bind to hydrolytic transition states

ABSTRACT:
A phosphonamidate or phosphonate analog-ligand having a conformation that substantially corresponds to the conformation of a hydrolytic transition state of an amide or ester ligand is used to produce antibodies of predetermined specificity. The antibodies include an epitope that binds to and thereby stabilizes the tetrahedral carbon atom of the amide or ester hydrolysis transition state of the ligand to hydrolyze the ligand at a predetermined site.

US PAT NO: 4,617,272 [IMAGE AVAILABLE] L3: 233 of 247
TITLE: **Enzyme** drying process

ABSTRACT:
A process for removing the water from an **enzyme**-containing aqueous medium is disclosed which comprises spraying the medium onto a heated, fluidized bed of inert substrate particles and recovering a dry **enzyme** concentrate therefrom.

US PAT NO: 4,612,169 [IMAGE AVAILABLE] L3: 234 of 247
TITLE: Process for sterilization of **enzyme** contaminated by bacteria

ABSTRACT:
An **enzyme** contaminated by bacteria during preservation or repeated use thereof is sterilized by immersing the **enzyme** contaminated mass in a polyvalent alcohol. This procedure does not inactivate the **enzyme**.

US PAT NO: 4,536,476 [IMAGE AVAILABLE] L3: 235 of 247
TITLE: Stable epimerase reagent, cyclase reagent and ring expansion reagent for cell-free production of cephalosporins

ABSTRACT:
Cyclase, epimerase and a ring expansion **enzyme** are isolated separately from a cell free extract of a prokaryotic beta-lactam producing organism to provide three separate and stable **enzyme** reagents for commercial production of cephalosporins from peptide precursors. Isolation is carried out by using ammonium sulfate, gel filtration and ion exchange chromatography. The enzymes may be immobilized on a suitable support and the production of cephalosporins may be carried out continuously.

US PAT NO: 4,510,246 [IMAGE AVAILABLE] L3: 236 of 247
TITLE: Isolation of cyclase, epimerase and a ring expansion **enzyme** for producing unnatural cephalosporins

ABSTRACT:
The enzymes, cyclase, epimerase and a ring expansion **enzyme**, are isolated separately from a cell-free extract of a prokaryotic beta-lactam producing organism. The isolated enzymes are used to produce unnatural cephalosporins from polypeptide precursors. Isolation is carried out by adding ammonium sulfate to 40% saturation to the cell-free extract to precipitate contaminating **proteins**, adding ammonium sulfate to 70% saturation to the resultant supernatant to precipitate the enzymes, suspending the precipitated enzymes in a buffer, separating epimerase from the suspension by gel filtration, and separating cyclase and the ring expansion **enzyme** from each other by ion exchange chromatography.

US PAT NO: 4,491,631 [IMAGE AVAILABLE] L3: 237 of 247
TITLE: Assay method for lipid component, assay composition, and process for production of **enzyme** used therefor

ABSTRACT:
An **enzyme** having enoyl-CoA hydratase activity, 3-hydroxyacyl-CoA dehydrogenase activity and 3-ketoacyl-CoA thiolase activity, all in the same **enzyme**, is produced by culturing the **microorganism** strain Pseudomonas fragi B-0771 FERM-P No. 5701, and isolating the **enzyme** thus produced from the culture medium. Such an **enzyme** is useful in an assay method for a fatty acid component in a sample, which fatty acid is originally present in the sample or is liberated from a fatty acid ester in the sample, comprising:
(a) converting the fatty acid to acyl-CoA;
(b) converting the thus-produced acyl-CoA to dehydroacyl-CoA;

(c) converting the thus-produced dehydroacyl-CoA to hydroxyacyl-CoA;
(d) converting the thus-produced hydroxyacyl-CoA to ketoacyl-CoA;
(e) converting the thus-produced ketoacyl-CoA to acyl-CoA; and measuring the detectable changes in the reaction mixture.
A composition suitable for such lipid assay comprises
ATP or GTP,
CoASH,
NAD,
acyl-CoA synthetase activity,
acyl-CoA oxidase activity,
enoyl-CoA hydratase activity,
3-hydroxyacyl-CoA dehydrogenase activity, and
3-ketoacyl-CoA thiolase activity,
wherein the last three activities are supplied by the new multi-active **enzyme**.

US PAT NO: 4,442,206 [IMAGE AVAILABLE] L3: 238 of 247
TITLE: Method of using isotropic, porous-wall polymeric membrane, hollow-fibers for culture of microbes

ABSTRACT:
Hollow fiber reactors for growing microbial cells. Isotropic hollow fibers are supported in a housing inoculated with cells. Nutrient medium passing through the lumen undergoes a pressure drop resulting in radial convective flow: the nutrient medium flows outwardly from the lumen into the surrounding area adjacent the entry port and fluid surrounding the hollow fiber flows into the lumen adjacent the exit port. With the efficient distribution of nutrients and removal of product, high cell densities are achieved providing for high product yields per unit reactor volume.

US PAT NO: 4,348,479 [IMAGE AVAILABLE] L3: 239 of 247
TITLE: Recovery of **proteinaceous** material having reduced nucleic acid levels

ABSTRACT:
The present invention relates to a process which comprises recovering **proteinaceous** materials from nucleoprotein complexes by derivatizing the **proteinaceous** material with a cyclic anhydride, thereby disassocating the complex, separating the derivatized **proteinaceous** material from the nucleic acids and subsequently regenerating the **proteinaceous** material. The recovery of the **proteinaceous** material is accomplished by maintaining the separated derivatized **proteinaceous** material at a suitable acidic pH, which is a function of the reaction time and the temperature, until the derivatized **proteinaceous** material is disassociated into the **proteinaceous** material and the cyclic anhydride or most usually the equivalent acid and the **proteinaceous** material is recovered.

=> s l2 not l3
L4 18 L2 NOT L3
=> d 1-18 ti ab

US PAT NO: 5,827,699 [IMAGE AVAILABLE] L4: 1 of 18
TITLE: Strain of Rhodococcus rhodochrous as a producer of nitrile hydratase

ABSTRACT:

This invention provides a new strain Rhodococcus rhodochrous having a high nitrile hydratase activity and capable of hydrating aliphatic and aromatic nitriles to corresponding amides. An isolated culture of Rhodococcus rhodochrous VKM Ac-1515D is also disclosed for use in the production of nitrile hydratase. An enzymatic inducer is not required in the growth medium, however, the growth medium does include a salt, a carbon source, and a nitrogen source.

US PAT NO: 5,801,034 [IMAGE AVAILABLE] L4: 2 of 18
TITLE: Method for killing cells without lysis and **enzyme** recovery

ABSTRACT:
This invention provides a method for killing cells in fermentation

mixtures in order to prepare the fermentation mixture for processing to recover or extract a desired product from the fermentation mixture. A preferred method of this invention comprises in either order, adjusting the pH of the fermentation mixture to a value equal to or less than about two pH units below the pK.sub.a of the compatible organic acid using a mineral acid, and adding a sufficient amount of a compatible organic acid and/or organic acid salt to the mixture to effect a substantially complete cell kill. The method of this invention is useful for killing **microorganisms** such as yeast, bacteria or fungi in any culture or fermentation mixture and is particularly useful in systems where it is desired to kill the cells without lysing them.

US PAT NO: 5,683,897 [IMAGE AVAILABLE] L4: 3 of 18
TITLE: Enzymatic process for the production of dihydroxyacetone phosphate from glycerophosphate and its use in enzymatic aldol additions

ABSTRACT:

The invention concerns a process for the production of dihydroxyacetone phosphate (DHAP) by enzymatic oxidation of glycerophosphate in the presence of glycerophosphate oxidase and an H.sub.2 O.sub.2 -decomposing **enzyme** such as catalase and also concerns the conversion of DHAP formed in situ in a coupled enzymatic aldol addition to produce carbohydrates or corresponding derivatives.

US PAT NO: 5,674,726 [IMAGE AVAILABLE] L4: 4 of 18
TITLE: **Enzyme** stabilization with poly-L-lysine

ABSTRACT:
An **enzyme** reaction stabilizer consisting of poly-L-lysine or its salt as an effective constituent, a method for using the **enzyme** reaction stabilizer, and an **enzyme** preservative consisting of poly-L-lysine or its salt as an effective constituent are disclosed in this invention. While **enzyme** reactions are carried out, the **enzyme** reaction stabilizer and the method for using it prevents both the deactivation of enzymes due to the proliferation of included **microorganisms** and the decomposition of the reaction products and there is an advantage in that the **enzyme** reaction stabilizer can easily be separated from the reaction products. On the other hand, while the **enzyme** solution is preserved, the **enzyme** preservative of this invention prevents the deactivation of the **enzyme** due to the proliferation of included **microorganisms** in the **enzyme** solution or the **enzyme** preserving solution. Even though the **enzyme** solution or the **enzyme** preserving solution may be supplied to the **enzyme** reactions, the **enzyme** reactions are not inhibited at all. The **enzyme** preservative of the present invention can easily be separated and removed from the reaction products.

US PAT NO: 5,614,374 [IMAGE AVAILABLE] L4: 5 of 18
TITLE: Glycerol dehydrogenase, process for its production and its use

ABSTRACT:
Pyrroloquinoline quinone-dependent glycerol dehydrogenase is provided which requires no surfactant for its solubilization and stabilization. The glycerol dehydrogenase has the following properties:
(a) catalyzing the following reaction:

glycerol+electron acceptor.fwdarw.

glyceraldehyde+reduced electron acceptor,
(b) optimum pH: pH 8-9,
(c) pH stability: stable at pH 7-11,
(d) optimum temperature: 20.degree.-25.degree. C,
(e) thermal stability: stable at a temperature of 30.degree. C or less for 10 minutes at a pH of 7.0,
(f) molecular weight: 70,000 by gel filtration and SDS polyacrylamide gel electrophoresis,
(g) bound to pyrroloquinoline quinone as a prosthetic group,
(h) soluble and stable without the need of an ionic or non-ionic surfactant.

US PAT NO: 5,407,824 [IMAGE AVAILABLE] L4: 6 of 18

TITLE: Recombinant coryneform bacterium for producing L-tryptophan

ABSTRACT:
L-tryptophan is produced by constructing a recombinant DNA composed of a vector DNA and DNA fragments bearing all of genetic information relating to the synthesis of DS, AS, PRT, PRAI, InGPS, TS and PGDH, introducing the recombinant DNA into a **microorganism** belonging to the genus Corynebacterium or Brevibacterium, culturing the **microorganism** in a medium, and recovering L-tryptophan accumulated in the culture.

US PAT NO: 5,405,759 [IMAGE AVAILABLE] L4: 7 of 18
TITLE: Heparitinase, process for producing the same and bacteria producing the same

ABSTRACT:
Disclosed are novel enzymes, heparitinase T-I, heparitinase T-II, heparitinase T-III and heparitinase T-IV, which degrade heparan sulfate and/or heparin, a process for producing thereof by cultivating a novel Bacillus circulans HpT 298 having an ability of producing these enzymes and a novel Bacillus circulans HpT 298.

US PAT NO: 5,378,621 [IMAGE AVAILABLE] L4: 8 of 18
TITLE: Killing cells without lysis in a method for **enzyme** recovery from a fermentation broth

ABSTRACT:
This invention provides a method for killing fungal cells without lysing in fermentation processes in order to prepare the fermentation mixture for processing to recover or extract an extracellularly expressed **enzyme** from the fermentation mixture. A preferred method of this invention comprises adjusting the pH of the fermentation mixture to less than 2.79 using a mineral acid, then adding sufficient acetic acid to the mixture to affect a substantially complete cell kill in mixture. A salt of the acetic acid can be used. The organic acid or salt can be added, then the pH adjusted to the desired level. Other organic acids can be used, in which case the pH of the mixture is adjusted to the pK.sub.a of the selected organic acid before the organic acid is added to the mixture. The method of this invention is useful for stopping the growth and killing the cells in any micro-organism, culture or fermentation such as those containing yeast, bacteria or fungi and is particularly useful in systems where it is desired to kill the cells without lysing them.

US PAT NO: 5,346,819 [IMAGE AVAILABLE] L4: 9 of 18
TITLE: Glycerol dehydrogenase, process for its production and its use

ABSTRACT:
Pyrroquinoline quinone-dependent glycerol dehydrogenase is provided which requires no surfactant for its solubilization and stabilization. The glycerol dehydrogenase has the following properties:
(a) catalyzing the following reaction: glycerol+electron acceptor.dbd.glyceraldehyde+reduced electron acceptor,
(b) optimum pH: pH 8-9,
(c) pH stability: stable at pH 7-11,
(d) optimum temperature: 20.degree.-25.degree. C.,
(e) thermal stability: stable at a temperature of 30.degree. C. or less for 10 minutes at a pH of 7.0,
(f) molecular weight: 70,000 by gel filtration and SDS polyacrylamide gel electrophoresis,
(g) bound to pyrroloquinoline quinone as a prosthetic group,
(h) soluble and stable without the need of an ionic or non-ionic surfactant.

US PAT NO: 5,278,058 [IMAGE AVAILABLE] L4: 10 of 18
TITLE: Process for the production of lignolytical enzymes by means of phanerochaete chrysosporium

ABSTRACT:

A process for the production of lignolytical enzymes using Phanerochaete chrysosporium which includes placing a culture of the pocket rot fungus Phanerochaete chrysosporium into a closed fermentation vessel which has no stirring mechanism. Pellets of Phanerochaete chrysosporium are

produced in the vessel by rotating and slewing the vessel, and **enzyme** is then harvested. An apparatus for carrying out the process includes a cardanic mount for freely rotatably and slewably suspending the vessel.

US PAT NO: 5,196,564 [IMAGE AVAILABLE] L4: 11 of 18
TITLE: Physiologically active substance TAN-931, its derivatives, their production and use

ABSTRACT:
A novel compound of the formula (I): ##STR1## wherein R.sub.1 is esterified carboxyl; R.sub.2, R.sub.3 and R.sub.4 are the same or different and are hydrogen or alkyl; A is formyl, hydroxyiminomethyl or carboxyl; and X is hydrogen or halogen, or a salt thereof, which is useful as an aromatase inhibitor or an intermediate of its production. Processes for producing the compound of the formula (I) and an aromatase inhibitor containing as an active component the compound of the formula (I) wherein A is formyl and X is hydrogen or, a salt thereof as well as Penicillium funiculosum capable for producing the compound (I) wherein R.sub.1 is carboxyl, R.sub.2, R.sub.3 and R.sub.4 are hydrogen and X is formyl are also disclosed.

US PAT NO: 5,124,262 [IMAGE AVAILABLE] L4: 12 of 18
TITLE: Mannose isomerase and process for mannose production using it

ABSTRACT:
A mannose isomerase having excellent properties for industrial use, such as high thermal stability and resistance to high substrate concentrations, can be produced by culturing a strain of Pseudomonas (sp. AM-9582), and extracting it from the cells of AM-9582. Mannose can be effectively produced from fructose of high concentrations using the **enzyme**.

US PAT NO: 5,120,658 [IMAGE AVAILABLE] L4: 13 of 18
TITLE: Thermostable tryptophan synthetase gene and extremely thermophilic plasmid vector incorporating said gene

ABSTRACT:
A DNA segment, specifically a thermostable tryptophan synthetase gene originating in the strain of extremely thermophilic Thermus aquaticus T2, characterized by the restriction **enzyme** map of FIG. 1, and not cleaved by specific restriction enzymes.
An extremely thermophilic plasmid vector pYK 105, having the DNA segment and an Escherichia coli plasmid vector pUC 13 incorporated in a cryptic plasmid pTT8.

US PAT NO: 4,990,451 [IMAGE AVAILABLE] L4: 14 of 18
TITLE: Process for the preparation of inulase

ABSTRACT:
A process for preparing endoinulase by cultivating a **microorganism** belonging to the genus Aspergillus and capable of producing inulase and recovering the inulase produced and accumulated in the culture medium by organic solvent precipitation, wherein inulase having a high exo activity is first precipitated at a low concentration of a water-soluble organic solvent and is removed, and then inulase having a high endo activity is precipitated at a high concentration of the water-soluble organic solvent and is recovered.

US PAT NO: 4,894,335 [IMAGE AVAILABLE] L4: 15 of 18
TITLE: Oil-in-water emulsions containing heteropolysaccharide biopolymers

ABSTRACT:
Stable oil-in-water emulsions are prepared containing a relatively high concentration of from 8 to 60% by weight of a heteropolysaccharide bipolymer, e.g., xanthan gum preferably, the emulsions contain greater than 15 up to 60% biopolymer, 40 to 99 parts of an aqueous phase containing 10 to 60% by weight biopolymer and 40% to 90% by weight water, 1 to 60 parts oil and 1 to 40% with respect to the aqueous phase and oil of a surface active agent. The emulsions are prepared by combining powdered biopolymer with water, oil and surfactant or by concentrating an oil-in-water emulsion containing the biopolymer such as by ultrafiltration. A fermentation wort containing the biopolymer may be

used in preparing the emulsion.

US PAT NO: 4,849,356 [IMAGE AVAILABLE] L4: 16 of 18
TITLE: Fructosyl transferase and the preparation of fructose oligomers therewith

ABSTRACT:
Process for preparing a fructosyl transferase **enzyme** preparation by cultivating an Aspergillus species and recovering from the culture a preparation having fructosyl transferase activity, wherein Aspergillus phoenicis is cultivated and the mycelium is recovered from the culture medium.

US PAT NO: 4,808,531 [IMAGE AVAILABLE] L4: 17 of 18
TITLE: New restriction **enzyme** and process for producing the same

ABSTRACT:
The invention provides restriction endonuclease Mf1 I capable of recognizing the base sequence as shown below on a double-stranded DNA molecule and cleaving the DNA chain at the arrow-marked positions, but has no such action when A is methylated

5'--Pu.dwnarw.GATC Py--3'

3'--Py CTAG.uparw.Pu--5'
(wherein A represents adenosine, G guanosine, T thymidine, C cytidine, Pu adenosine or guanosine, and Py thymidine or cytidine). The restriction endonuclease is produced by culturing Microbacterium flavum IAM 1642, FERM BP-938 in a culture medium and recovering it from the culture.

US PAT NO: 4,237,003 [IMAGE AVAILABLE] L4: 18 of 18
TITLE: Process for biological purification of liquid wastes

ABSTRACT:
An improved process for biological purification of liquid wastes is provided. The improvement is obtained by utilizing anaerobic bacteria in the presence of extra-cellular enzymes produced by Gram-positive bacteria and separated from said Gram-positive bacteria and the intra-cellular enzymes contained therein. As compared to the current technique the anaerobic process according to the invention may produce only 0.2% of sludge, while the retention time may be only 25% of the time currently used.

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US PAT NO: 5,093,255 [IMAGE AVAILABLE] L3: 180 of 247
TITLE: Acid urease and production thereof
INVENTOR: Shigeya Kakimoto, Kawanishi, Japan
Yasuhiro Sumino, Kobe, Japan
Takashi Suzuki, Takatsuki, Japan

ABSTRACT:
A novel urease having an optimal pH for activity in the acidic region is produced by a **microorganism** belonging to the genus Lactobacillus or Streptococcus. The urease is superior to the conventional urease in pH stability, temperature stability and alcohol stability.

US PAT NO: 5,082,770 [IMAGE AVAILABLE] L3: 181 of 247
TITLE: Method for quantitative determination of polyamines
INVENTOR: Masato Okada, Yokohama, Japan
Makoto Sakamoto, Fujisawa, Japan

ABSTRACT:
A method for the quantitative determination of polyamines, which comprises allowing a polyamine oxidizing **enzyme**, an .omega.-aminoalkylaldehyde dehydrogenase, an oxidized nicotinamide coenzyme and, as required, an acylpolyamine anidohydrolase to act upon a sample solution containing polyamines (for example, urine, blood and other kinds of body fluid), and measuring the reduced nicotinamide coenzyme thus formed by, for example, colorimetry, thereby determining the amount of said polyamines.

US PAT NO: 5,079,352 [IMAGE AVAILABLE] L3: 182 of 247
TITLE: Purified thermostable **enzyme**
INVENTOR: David H. Gelfand, Oakland, CA
Susanne Stoffel, El Cerrito, CA
Frances C. Lawyer, Oakland, CA
Randall K. Saiki, Richmond, CA

ABSTRACT:
Recombinant DNA vectors that encode a thermostable DNA polymerase are useful in the recombinant production of thermostable DNA polymerase. The recombinant thermostable polymerase is preferred for use in the production of DNA in a polymerase chain reaction. Especially useful vectors encode the .about.94,000 dalton thermostable DNA polymerase from thermus aquaticus.

US PAT NO: 5,079,152 [IMAGE AVAILABLE] L3: 183 of 247
TITLE: Antibody combining sites that exhibit stereoselective synthase activity, and methods using the same
INVENTOR: Stephen Benkovic, State College, PA
Richard A. Lerner, La Jolla, CA
Alfonso Tramontano, San Diego, CA
Andrew D. Napper, State College, PA

ABSTRACT:
A phosphorus-containing analog-ligand having a stereoconfiguration that substantially corresponds to the stereoconfiguration of an amide- or ester-forming transition state is used to induce production of receptor molecules whose antibody combining sites have stereospecific amide or ester synthase catalytic activity when reacted with a ligand containing (i) a carbonyl carbon atom and (ii) an amine or alcohol group that are structurally capable of forming a preselected stereoisomer of a carboxylic amide or ester.

US PAT NO: 5,077,217 [IMAGE AVAILABLE] L3: 184 of 247
TITLE: Method for membrane reactor resolution of stereoisomers
INVENTOR: Stephen L. Matson, Harvard, MA
Stephen A. Wald, Wayland, MA
Charles M. Zepp, Berlin, MA
David R. Dodds, Millis, MA

ABSTRACT:
This invention relates to novel methods for facilitating the enzymatic resolution of racemic mixtures of esters, which are derivatized with groups which enhance the esters' aqueous solubility, in an extractive member reactor where the **enzyme** is placed alternatively either (1) in the aqueous phase, (2) in association with the membrane, or (3) in the aqueous phase and in association with the membrane, wherein the aqueous ester phase is contacted with one side of the membrane, and where an organic extractive phase is contacted with the other side of the membrane, wherein the extractive phase serves to remove the resolving reaction product. Of particular significance regarding this invention is its use of water soluble esters that are derivatized with groups which enhance their aqueous solubility and their reactivity with enzymatic resolving methods which are mediated in an aqueous environment. Novel methods were utilized to prepare these esters, for use in this invention's methods for enzymatically resolving the racemic mixtures of the esters, to produce the separate chiral isomers of the racemic mixture. The importance of the resolution of the separate chiral isomers of the racemic mixtures resides in the isolation of the isomers which frequently have different biological activities.

US PAT NO: 5,070,020 [IMAGE AVAILABLE] L3: 185 of 247
TITLE: Recombinant DNA expression vectors and DNA compounds that encode deacetoxycephalosporin C synthetase
INVENTOR: Thomas D. Ingolia, Indianapolis, IN
Steven Kovacevic, Indianapolis, IN
James R. Miller, Indianapolis, IN
Paul L. Skatrud, Greenwood, IN

ABSTRACT:
The present invention provides DNA compounds that encode deacetoxycephalosporin C synthetase (DAOCS) activity. The compounds can be used to construct recombinant DNA expression vectors for a wide variety of host cells, including E. coli, Penicillium, Streptomyces,

Aspergillus, and Cephalosporium.

US PAT NO: 5,070,018 [IMAGE AVAILABLE] L3: 186 of 247
TITLE: Method of controlling gene expression
INVENTOR: Norman K. Peters, Berkeley, CA
John W. Frost, Menlo Park, CA
Sharon R. Long, Palo Alto, CA

ABSTRACT:
A method of controlling expression of a DNA segment under the control of a nod gene promoter which comprises administering to a host containing a nod gene promoter an amount sufficient to control expression of the DNA segment of a compound of the formula: ##STR1## in which each R is independently H or OH, is described.

US PAT NO: 5,068,190 [IMAGE AVAILABLE] L3: 187 of 247
TITLE: N-acetylhexosamine-dehydrogenase, process for producing same, method for the quantitative analysis of N-acetylglucosamine or N-acetylgalactosamine using same and kit for use in the quantitative analysis
INVENTOR: Tatsuo Horiuchi, Nagareyama, Japan
Toshiko Kurokawa, Noda, Japan

ABSTRACT:
N-Acetylhexosamine-dehydrogenase which takes off hydrogen from N-acetylglucosamine or N-acetylgalactosamine to convert them to N-acetylglucosaminolactone or N-acetylgalactosaminolactone, respectively, and, at the same time, reduces co-enzymes NAD.sup.+ to NADH is provided herein.
The **enzyme** of this invention can be obtained by culturing, in a medium, a strain belonging to Genus Pseudomonas and having an ability to produce N-acetylhexosamine-dehydrogenase, followed by collecting the **enzyme** from the cultured product.
Herein is also provided a method for quantitatively analyzing N-acetylglucosamine or N-acetylgalactosamine which comprises reacting N-acetylglucosamine-dehydrogenase upon a sample containing N-acetylglucosamine or N-acetylgalactosamine and measuring the quantity of the resulting NADH.

US PAT NO: 5,068,189 [IMAGE AVAILABLE] L3: 188 of 247
TITLE: Recombinant DNA vectors encoding a 4"-O-isovaleryl acylase derived from a carbomycin biosynthetic gene, designated carE, for use in streptomyces and other organisms
INVENTOR: Janet K. Epp, Indianapolis, IN
Brigitte E. Schoner, Monrovia, IN

ABSTRACT:
The carE gene of Streptomyces thermotolerans has been isolated and used to construct recombinant DNA expression vectors. The carE gene encodes 4"-O-isovaleryl acylase activity important in the biosynthesis of a number of useful antibiotics. The carE gene can be used not only to construct recombinant cells with an increased ability to produce the acylase **enzyme** but also to construct recombinant cells with the ability to produce novel antibiotic compounds.

US PAT NO: 5,063,159 [IMAGE AVAILABLE] L3: 189 of 247
TITLE: Interferon-induced (2'-5') oligo a synthetase gene, mRNA, cDNA and enzymes having (2'-5') oligo a synthetase activity
INVENTOR: Michel Revel, Rehovot, Israel
Judith Chebath, Rehovot, Israel

ABSTRACT:
Human DNA encoding enzymes having (2'-5') oligo A synthetase has been sequenced. The amino acid sequences of the enzymes have been deduced. Antigenic peptides have been prepared which may be used to raise antibodies which recognize and immunoprecipitate (2'-5') oligo A synthetase. Methods of monitoring interferon activity in a subject are presented.

US PAT NO: 5,034,322 [IMAGE AVAILABLE] L3: 190 of 247
TITLE: Chimeric genes suitable for expression in plant cells
INVENTOR: Stephen G. Rogers, Webster Groves, MO
Robert T. Fraley, Glendale, MO

ABSTRACT:
This invention relates to chimeric genes which are capable of being expressed in plant cells. Such genes contain (a) a promoter region derived in a gene which is expressed in plant cells, such as the nopaline synthase gene; (b) a coding or structural sequence which is heterologous with respect to the promoter region; and (c) an appropriate 3' non-translated region. Such genes have been used to create antibiotic-resistant plant cells; they are also useful for creating herbicide-resistant plants, and plants which contain mammalian polypeptides.

US PAT NO: 5,013,659 [IMAGE AVAILABLE] L3: 191 of 247
TITLE: Nucleic acid fragment encoding herbicide resistant plant acetolactate synthase
INVENTOR: John R. Bedbrook, Piedmont, CA
Roy S. Chaleff, Pennington, NJ
Saverio C. Falco, Arden, DE
Barbara J. Mazur, Wilmington, DE
Christopher R. Somerville, Okemon, MI
Narendra S. Yadav, Wilmington, DE

ABSTRACT:
A nucleic acid fragment encoding a herbicide-resistant plant acetolactate synthase **protein** is disclosed. This nucleic acid fragment contains at least one nucleotide mutation resulting in one amino acid change in one of seven substantially conserved regions of acetolactate synthase amino acid homology. This mutation results in the production of an acetolactate synthase **protein** which is resistant to sulfonylurea herbicide compounds compared to the wild-type **protein**. Transformation of herbicide sensitive plants or plant cells with the fragment results in resistance to the herbicide.

US PAT NO: 5,004,692 [IMAGE AVAILABLE] L3: 192 of 247
TITLE: Cloning and expression of phosopholipase C genes
INVENTOR: J. Yun Tso, Menlo Park, CA
Cary L. Queen, Palo Alto, CA

ABSTRACT:
Improved means for producing Clostridium Phospholipase C (PL) polypeptides based on the cloning and expression of recombinant DNA segments containing Clostridium PLC genes and fragments. The DNA segments are operably linked to host specific expression control sequences for exogenous production of Clostridium PLC, or fragments thereof, substantially free from naturally-associated Clostridium gene products.

US PAT NO: 4,997,760 [IMAGE AVAILABLE] L3: 193 of 247
TITLE: Novel ganglioside ceramidase isolated from Nocardia and process for producing same
INVENTOR: Yoshio Hirabayashi, Shizuoka, Japan
Tatsurokuro Tochikura, Kyoto, Japan
Setsu Kadowaki, Kyoto, Japan
Kenji Yamamoto, Shiga, Japan

ABSTRACT:
This invention provides a novel ganglioside ceramidase which has a substrate specificity at least for GD1a, GM1, GM2 and GM3 and acts at least on GD1a, GM1, GM2 and GM3 and catalyzes the reaction of hydrolysis of ganglioside to lysoganglioside and fatty acid.
This invention further provides a process for producing the novel ganglioside ceramidase which comprises cultivating ganglioside ceramidase producing strain belonging to the genus Nocardia in a culture medium and collecting ganglioside ceramidase from the culture.

US PAT NO: 4,975,374 [IMAGE AVAILABLE] L3: 194 of 247
TITLE: Expression of wild type and mutant glutamine synthetase in foreign hosts
INVENTOR: Howard Goodman, Newton, MA
Shiladitya DasSarma, Amherst, MA
Edmund Tischer, Palo Alto, CA
Theresa K. Peterman, Cambridge, MA

ABSTRACT:
The invention relates to a mutant glutamine synthetase (GS) **enzyme**

which is resistant to inhibition by herbicidal GS inhibitors, such as phosphinothricin (PPT), genetic sequences coding therefor, plants cells and prokaryotes transformed with the genetic sequences, and herbicidal GS inhibitor-resistant plant cells and plants.

US PAT NO: 4,950,603 [IMAGE AVAILABLE] L3: 195 of 247
TITLE: Recombinant DNA expression vectors and DNA compounds that encode isopenicillin N synthetase from Streptomyces lipmanii
INVENTOR: Thomas D. Ingolia, Indianapolis, IN
Barbara J. Weigel, Indianapolis, IN

ABSTRACT:
DNA compounds encoding the Streptomyces lipmanii isopenicillin N synthetase (IPNS) gene are useful for constructing a variety of recombinant DNA vectors. The vectors are useful in producing IPNS in a wide variety of host cells, such as Streptomyces, Penicillium, and Cephalosporium. DNA compounds encoding the transcription and translation activating sequence and transcription termination sequence of the S. lipmanii IPNS gene are also useful in the construction of expression vectors, especially Streptomyces expression vectors. The S. lipmanii IPNS gene can be isolated from plasmid pOGO239, available from the Northern Regional Research Center under accession number NRRL B-18250.

US PAT NO: 4,948,729 [IMAGE AVAILABLE] L3: 196 of 247
TITLE: Production of soluble recombinant **proteins**
INVENTOR: Michael Piatak, Jr., Walnut Creek, CA
Walter J. Laird, Pinole, CA
Julie A. Lane, Oakland, CA

ABSTRACT:
A system for expression of coding sequences for desired heterologous **proteins** in procaryotic hosts whereby the **protein** is produced intracellularly in soluble, biologically active form, is disclosed. The expression is obtained by ligation of the coding sequence downstream of, and proximally to, but out of reading frame with, the terminated leader encoding sequence for a secreted bacterial **protein**, such as alkaline phosphatase. The resultant **proteins** are influenced by the leader sequence codons to effect the desired three-dimensional conformation, but not to effect secretion.

US PAT NO: 4,931,397 [IMAGE AVAILABLE] L3: 197 of 247
TITLE: Method for removing antifoaming agents during processing of microbial fermentations
INVENTOR: Curtis J. Montgomery, Elkhart, IN
Chimanbhai P. Patel, Mishawaka, IN
Jayarama K. Shetty, Elkhart, IN

ABSTRACT:
Antifoaming agents are commonly used during culturing of **enzyme**-producing **microorganisms**. These antifoams often persist through **enzyme** processing, slowing filtrations, clogging filtration membranes and adversely affecting the quality of the final product. The present invention describes a method for removing antifoams, and often carbohydrates and pigments, from **enzyme** systems using mineral clay, the preferred clay being bentonite.

US PAT NO: 4,931,390 [IMAGE AVAILABLE] L3: 198 of 247
TITLE: Expression of the cloned lysostaphin gene
INVENTOR: Paul A. Recsei, New York, NY

ABSTRACT:
The present invention provides recombinant plasmids which is transformant microbial hosts express lysostaphin, a bacteriocin that kills most known staphylococcal species. The invention also provides lysostaphin, substantially free from non-lysostaphin contaminants. Recombinant plasmids, pRG5, pJP1, pDF8 and pRP1, were derived by inserting a 1.5 kilobase segment of DNA coding for lysostaphin into the cloning vectors, pUC8, pBC16, pBD64 and pSPV1, respectively. E. coli strain JM105 transformed by pRG5 and members of Bacillus species, including B. subtilis and B. sphaericus transformed by pJP1, pDF8 and pRP1 produce lysostaphin which is immunologically and electrophoretically indistinguishable from that produced by S. simulans, the natural source. Furthermore, B. sphaericus strain 00/pJP1 transformants produce five

times the amount of lysostaphin as S. simulans. The invention also provides the 1.5 kbp DNA fragment coding for lysostaphin. The sequence of the DNA encodes preprolysostaphin, a monomeric 389 amino acid **protein**, which is posttranslationally processed to mature lysostaphin.

US PAT NO: 4,927,751 [IMAGE AVAILABLE] L3: 199 of 247
TITLE: Processes for obtaining exoenzymes by culture
INVENTOR: Klaus Memmert, Julich, Federal Republic of Germany
Christian Wandrey, Julich, Federal Republic of Germany

ABSTRACT:
Exoenzymes, such as **proteases**, xylanases and amylases, are obtained continuously by cultivation of exoenzyme-producing **microorganisms** in one step in a fermenter which is operated with continuous flow and in which a deficiency state corresponding to maximal **enzyme** productivity is effected. Optical density of the culture (as a measure of the biomass density) and exoenzyme concentration in culture can be monitored to control the timing and extent of the deficiency state. It is particularly advantageous to impose an oxygen limitation and to maintain the deficiency state continuously by exerting an effect on the oxygen input.

US PAT NO: 4,923,808 [IMAGE AVAILABLE] L3: 200 of 247
TITLE: Method for identifying mutants secreting high levels of heterologous **proteins**
INVENTOR: Mark D. Matteucci, San Francisco, CA

ABSTRACT:
A method is provided for identifying mutants that leads to the enhanced expression and periplasmic secretion of heterologous preproteins from host cells. Mutants in the host cell or in the gene encoding the heterologous preprotein are identified readily by transforming the host cell with a fusion which comprises DNA encoding the heterologous preprotein and a detectable marker **protein**. A marker **protein** is chosen that only becomes active in the periplasmic or extracellular environment. Thus, desired mutants are identified by enhanced marker expression and secretion. The ability of the preprotein DNA or host cell mutants to enhance expression and secretion of the heterologous **protein-enzyme** fusions is found to correlate with similar enhancement of the expression and secretion of the heterologous **protein** alone and not as a fusion. Screening assays led to the identification of a preprotein silent mutation resulting in high-yield secretion that could not be explained under current theories and which provides a new method for obtaining high-yielding host-vector systems.

US PAT NO: 4,921,786 [IMAGE AVAILABLE] L3: 201 of 247
TITLE: Novel NAD synthetase, assay method using said novel NAD synthetase and a process for production thereof
INVENTOR: Mamoru Takahashi, Shizuoka, Japan
Hideo Misaki, Shizuoka, Japan
Shigeyuki Imamura, Shizuoka, Japan
Kazuo Matsuura, Shizuoka, Japan

ABSTRACT:
A novel NAD synthetase is produced by culturing a broth of Bacillus stearothermophilus H-804 FERM BP-1408. This new **enzyme** selectively catalyzes the reaction ##STR1## without catalyzing the reaction ##STR2## The **enzyme** uses ammonia or ammonium ion as a substrate, but does not use either glutamine or asparagine. Also disclosed is an assay method using the **enzyme**, for any one of ATP, deamide-NAD, ammonia or ammonium ion in a specimen to be assayed.

US PAT NO: 4,916,064 [IMAGE AVAILABLE] L3: 202 of 247
TITLE: Carbohydrate refining process and novel **enzyme** compositions suitable for use therein
INVENTOR: Frank G. H. Derez, Halle, Belgium
Jos W. G. C. de Sadeleer, Kessel Lo, Belgium
Alan L. Reeve, Leefdaal, Belgium

ABSTRACT:
A process is provided for treating aqueous carbohydrate solutions with phospholipase **enzyme** compositions to improve the filterability and clarity of the filtrate of such solutions.

US PAT NO: 4,902,620 [IMAGE AVAILABLE] L3: 203 of 247
TITLE: Novel DNA for expression of delta-aminolevulinic acid synthetase and related method
INVENTOR: Martin Bard, Menomonee Falls, WI
Thomas D. Ingolia, Indianapolis, IN

ABSTRACT:
The present invention is a novel method for maintaining and selecting recombinant DNA-containing host cells wherein the DNA encoding a selectable phenotype and the DNA encoding a useful polypeptide are the same. The aforementioned DNA is useful for expressing .delta.-aminolevulinic acid synthetase (ALAS) for the ultimate expression of .delta.-aminolevulinic acid (ALA) in yeast and related organisms. The invention further comprises plasmids pIT300, pIT301, pIT302, pIT304, pIT305, pIT306 and related Saccharomyces ALA deficient transformants. ALA is a five carbon amino acid that is useful as a light dependent herbicide.

US PAT NO: 4,900,674 [IMAGE AVAILABLE] L3: 204 of 247
TITLE: Antibody combining sites that exhibit amide or ester synthase activity
INVENTOR: Stephen Benkovic, State College, PA
Richard A. Lerner, La Jolla, CA
Alfonso Tramontano, San Diego, CA
Andrew D. Napper, State College, PA

ABSTRACT:
A phosphorous-containing analog-ligand having a conformation that substantially corresponds to the conformation of an amide- or ester-forming transition state is used to induce production of receptor molecules whose antibody combining sites have amide or ester synthase catalytic activity when reacted with a ligand containing (i) a carbonyl carbon atom and (ii) an amine or alcohol group that are structurally capable of forming a preselected carboxylic amide or ester bond.

US PAT NO: 4,900,669 [IMAGE AVAILABLE] L3: 205 of 247
TITLE: Dual-stage fermentation
INVENTOR: Randolph T. Hatch, Wellesley, MA
Keith C. Backman, Bedford, MA

ABSTRACT:
A method of continuous product formation using at least two continuous fermentation units and a **microorganism** capable of being induced, in response to environmental conditions, to undergo a genetic alteration from a state favoring **microorganism** growth to a state favoring product production by the **microorganism**. The first continuous fermentation unit is maintained at environmental conditions selected to favor growth of the **microorganism** and to be nonpermissive for the genetic alteration. The **microorganism** is grown continuously in the first unit, and a portion of the growing **microorganism** cell mass is transferred via connecting means to the second continuous fermentation unit. Either the connecting means or the second unit is maintained at second environmental conditions selected to effect the genetic alteration. The altered **microorganism** is cultured in the second unit. Exudate from this second fermentor (containing **microorganism** mass and medium) is continually removed and the product which is present, either in the **microorganisms** themselves or the medium surrounding them, is extracted.

US PAT NO: 4,894,340 [IMAGE AVAILABLE] L3: 206 of 247
TITLE: Microbial sulfhydryl oxidase and method
INVENTOR: Frank E. Hammer, Schaumburg, IL
Don Scott, Schaumburg, IL
Fred W. Wagner, Lincoln, NE
Lee Ray, Elk Grove Village, IL
Rebecca S. de la Motte, Lincoln, NE

ABSTRACT:
A sulfhydryl oxidase, which is a flavor **protein**, and a method of isloating the same from a culture of the **microorganism** Aspergillus niger. The claimed sulfhydryl oxidase has a molecular weight of about 106,000 and a pH optimum of about 5.5 for oxidation of glutathione in an acetate buffer at 250.degree. C.

US PAT NO: 4,892,819 [IMAGE AVAILABLE] L3: 207 of 247
TITLE: Recombinant DNA expression vectors and DNA compounds that encode isopenicillin N synthetase from penicillium chrysogenum
INVENTOR: Lucinda G. Carr, Indianapolis, IN
Thomas D. Ingolia, Indianapolis, IN
Stephen W. Queener, Indianapolis, IN
Paul L. Skatrud, Greenwood, IN

ABSTRACT:
The present invention comprises novel DNA compounds that encode isopenicillin N synthetase. The invention also comprises methods, transformants, and polypeptides related to the novel DNA compounds. The novel isopenicillin N synthetase-encoding DNA, together with its associated transcription and translation activating sequence, was isolated from Penicillium chrysogenum. The isopenicillin N synthetase-encoding DNA can be used to construct novel E. coli expression vectors that drive expression of isopenicillin N synthetase in E. coli. The intact P. chrysogenum isopenicillin N synthetase-encoding DNA and associated transcription and translation activating sequence can also be used to construct expression vectors that drive expression of the isopenicillin N synthetase in P. chrysogenum and Cephalosporium acremonium. The transcription and translation activating sequence can be fused to a hygromycin phosphotransferase-encoding DNA segment and placed onto expression vectors that function in P. chrysogenum and C. acremonium. The transcription termination and mRNA polyadenylation signals of the P. chrysogenum·isopenicillin N synthetase can be used to increase ultimate expression of a product encoded on a recombinant DNA vector.

US PAT NO: 4,889,818 [IMAGE AVAILABLE] L3: 208 of 247
TITLE: Purified thermostable **enzyme**
INVENTOR: David H. Gelfand, Oakland, CA
Susanne Stoffel, El Cerrito, CA
Frances C. Lawyer, Oakland, CA
Randall K. Saiki, Richmond, CA

ABSTRACT:
A purified thermostable **enzyme** is obtained that has unique characteristics. Preferably the **enzyme** is isolated from the Thermus aquaticus species and has a molecular weight of about 86,000-90,000 daltons. The thermostable **enzyme** may be native or recombinant and may be used in a temperature-cycling chain reaction wherein at least one nucleic acid sequence is amplified in quantity from an existing sequence with the aid of selected primers and nucleotide triphosphates. The **enzyme** is preferably stored in a buffer of non-ionic detergents that lends stability to the **enzyme**.

US PAT NO: 4,886,757 [IMAGE AVAILABLE] L3: 209 of 247
TITLE: Spiramycin resistance-conferring cloning vectors
INVENTOR: Mark A. Richardson, Indianapolis, IN

ABSTRACT:
A novel gene conferring resistance to spiramycin in Streptomyces and related organisms was cloned from a genomic library of Streptomyces ambofaciens DNA. A thirty-one Kb fragment of S. ambofaciens DNA including the spiramycin-resistance gene was isolated from this library on a cosmid designated pKC592. The novel spiramycin-resistance gene can be isolated on an .about.2.9 Kb BamHI fragment by subcloning restriction fragments obtained from the pKC592 insert DNA. This BamHI fragment contains all of the information required for the expression of the spiramycin resistant phenotype in Streptomyces. Vectors and transformants containing the novel spiramycin resistance gene are provided.

US PAT NO: 4,885,252 [IMAGE AVAILABLE] L3: 210 of 247
TITLE: Recombinant DNA expression vectors and DNA compounds that encode isopenicillin N synthetase from aspergillus nidulans
INVENTOR: Thomas D. Ingolia, Indianapolis, IN
Stephen W. Queener, Indianapolis, IN
Paul L. Skatrud, Greenwood, IN
Barbara J. Wiegel, Indianapolis, IN

ABSTRACT:

DNA compounds and recombinant DNA expression vectors that encode and drive expression in recombinant host cells of the isopenicillin N synthetase activity of Aspergillus nidulans are useful to produce isopenicillin N synthetase and to improve the yield of .beta.-lactam-containing antibiotics from antibiotic-producing organisms. The isopenicillin N synthetase gene of A. nidulans can be isolated from plasmid pOGO04, available from the Northern Regional Research Center under the accession number NRRL B-18171.

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